REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application.

Claims 1-46, and 48-50 are pending.

Claims 9 and 20 are amended.

Claim 47 is cancelled.

Claim Rejections, 35 U.S.C. §112, First Paragraph

Claims 20 and 31 were rejected under 35 U.S.C. § 112, first paragraph. The Applicant respectfully disagrees. As is well established, a claim limitation in and of itself may enable one skilled in the art to make and use the claim containing limitations. *See MPEP §2164.* Therefore, claim 20 as originally filed provides support for "deriving the first probability that the first candidate string was incorrectly entered as the phonetic string" and "deriving the second probability that the second candidate string was incorrectly entered as the phonetic string". Claim 20, however, has been amended to correct antecedent basis and, as amended, recites "deriving the first probability that the first candidate string was incorrectly entered from data collected from multiple users entering a training text in the first language" and "deriving the second probability that the second candidate string was incorrectly entered from data collected from multiple users entering a training text in the second language". Accordingly, amended claim 20 may describe both phonetic and non-phonetic languages. Withdrawal of the rejection is respectfully requested.

Claim 31 recites "a typing model to receive an input string and determine a typing error probability of how likely a first candidate string was incorrectly

entered as the input string, the typing model being trained in a first language" and "a language model to provide output strings for each of the typing candidates, the language model being trained in a second language".

Beginning at page 7 of the subject application, an example of a typing model is described as follows:

> The typing model is trained from data collected from many trainers who enter a training text. For instance, in the context of the Chinese language, the trainers enter a training text written in Pinyin. The observed errors made during entry of the training text are used to compute the probabilities associated with the typing candidates that may be used to correct the typing error. **Where multiple typing models are employed, each typing model may be trained in a different language.** *See Application, Pages 7-8 (emphasis added).*

An exemplary description of different languages employed by the typing model is described as follows:

> The typing models may be trained for multiple languages, such as English and Chinese, to discern how likely the input sequence is a word in one language as opposed to another language. Both models can run in parallel and are guided by the language model (e.g., a Chinese language model) to output the most likely sequence of characters (i.e., English and Chinese characters). *See Application, Page 11.*

An example of a language model is described as follows:

> More particularly, the language model is a trigram language model that attempts to determine a language text probability of how likely a probable conversion output string represents the candidate string based on two previous textual elements. The conversion string is written in a different language or different text form than the input string. For example, the input string might comprise Chinese Pinyin or other phonetic text and the output string might comprise Chinese Hanzi or other language text.

An exemplary description of different languages employed by the typing model and the language model is described as follows:

> The typing models may be trained for multiple languages, such as English and Chinese, to discern how likely the input sequence is a word in one language as opposed to another language. Both models can run in parallel and are guided by the language model (e.g., a Chinese language model) to output the most likely sequence of characters (i.e., English and Chinese characters). *See Application, Page 11.*

Therefore, the language model may be trained for a different language (e.g., the second language) than the language (e.g., the first language) used to train the typing model. Accordingly, withdrawal of the rejection with respect to claim 31 is respectfully requested.

Claim Rejections 35 U.S.C. §112, Second Paragraph

Claim 47 was cancelled. Withdrawal of the rejection is respectfully requested.

Claim Rejections 35 U.S.C. §102(e)

Claims 1-8, 26-29 and 48 were rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,073,146 to Chen (hereinafter "Chen"). The Applicant respectfully disagrees.

Claim 1 recites a method comprising "enabling a user to input an input string containing at least first and second languages without switching entry modes" and "converting the input string to an output string that contains the first and second languages". Chen does not disclose, teach or suggest these aspects.

Chen is directed to a system and method for processing Chinese language text. The system and method of Chen rely on special diacritic keys that permit a user to annotate each entered phonetic text syllable, as shown in the following excerpt:

> The invention is a system and method for accurately and efficiently entering phonetic Chinese (Pinyin and BPMF) into a computer system and for accurately converting the phonetic input into the Hanzi form. The system has a novel keyboard with diacritic keys (and corresponding ASCII coding) that permit the user to annotate each entered phonetic text syllable with a diacritic that indicates the tone of the syllable. A process executing on the system determines that a syllable has been entered when a diacritic (or delimiter) key is struck. An entered phonetic syllable is then compared to a list of acceptable phonetic syllables and abbreviations. If the entered syllable is on the list, the correctly spelled and accented syllable is stored in memory and displayed on a phonetic portion of a graphical display. The process continues for succeeding syllables until a delimiter is entered. *See Chen, Col. 4, Lines 28-43.*

Although Chen describes mixed text, the text is entered utilizing different text forms, as shown in the following excerpts:

> In an alternative embodiment, a "no tone" diacritic is added after each unaccented (untoned) Chinese syllable (including the function words, particles, and affixes). This embodiment is useful when "mixed language/text" is entered, i.e. English or other non Chinese text is included with the Chinese text input. Since the non Chinese text is uncoded (unmarked) with a diacritic, the Chinese words/syllables (marked with diacritics including the untone diacritic) can be distinguished from the unmarked non Chinese text. Non Chinese text is also delimited with special delimiters, e.g. with spaces between the words. *See Chen, Col. 6, Line 66 to Col. 7, Line 9.*
>
> When mixed text is entered (or in alternative preferred embodiments used to enter Pinyin), the user enters an untone diacritic after each unaccented syllable (and function word). Spaces (or equivalent word boundary delimiters) are entered after non Chinese words. *See Chen, Col. 9, Lines 35-40.*

Therefore, mixed text entry in Chen requires the use of different text forms, such that Chinese syllables are marked with diacritics, whereas non-Chinese text does not include diacritics and is marked with delimiters.

Beginning at page 28 of the subject Specification, Applicant describes an exemplary implementation of multilingual training for modeless entry that addresses the traditional requirement of switching between modes when entering two or more languages. For instance, a user who is typing in Chinese may wish to enter an English word. Traditional input systems require the user to switch modes between typing English words and Chinese words. Unfortunately, it is easy for users to forget to switch. The exemplary language input architecture can be trained to accept mixed-language input, and hence eliminate mode shifting between two or more languages in a multilingual word processing system. This is referred to as "modeless entry". The architecture, for instance, can automatically distinguish between words of different languages, such as discerning which word is Chinese and which word is English. Thus, modeless text entry may be performed "without switching modes between entry **of different text forms** or different languages". *See Application, Page 7 (emphasis added).*

As previously described, however, the mixed text entry in Chen requires the use of different text forms so that when "the non Chinese text is uncoded (unmarked) with a diacritic, the Chinese words/syllables (marked with diacritics including the untone diacritic) can be distinguished from the unmarked non Chinese text". *See Chen, Col. 7, Lines 4-8.* Thus, Chen describes a mode in which "diacritics [which] are used to demarcate stressed syllables (and in some embodiments unstressed syllables) and tone values in a phonetic representation of the Chinese language" and a mode in which "no diacritics are entered after non Chinese words". *See Chen, Col. 6, Lines 48-51 and Col. 10, Lines 64-66.* Therefore, Chen does not disclose, teach or suggest "enabling a user to input an input string containing at least first and second languages without switching entry

modes" as recited in claim 1. Accordingly, for at least this reason, claim 1 is allowable over Chen and the Applicant respectfully request that the rejection of claim 1 be withdrawn.

Claims 2-4 depend directly from claim 1. Accordingly, for at least these reasons, these claims are allowable and withdrawal of the rejection is respectfully requested.

Claim 5 recites a method comprising "enabling a user to enter phonetic text and non-phonetic text as a common string without switching modes" and "converting the phonetic text to corresponding language text, while leaving the non-phonetic text unconverted". **Claim 26** recites a language input architecture comprising "a user interface that enables a user to input an input string containing at least first and second languages without switching entry modes" and "a converter to convert the input string to an output string that contains the first and second languages". **Claim 48** recites one or more computer-readable media having computer-executable instructions that, when executed on a processor, direct a computer to "enable a user to enter phonetic text and non-phonetic text as a common string without switching modes" and "convert the phonetic text to corresponding language text, while leaving the non-phonetic text unconverted".

As described in relation to claim 1, Chen describes mixed text entry which requires the use of modes to enter different text forms, such that Chinese syllables are marked with diacritics versus non-Chinese text, which is marked with delimiters and does not include diacritics. Therefore, Chen does not disclose, teach or suggest the above referenced limitations. These claims are also allowable based on their own recited features, which are not disclosed by Chen. For example, claim 48 recites "convert the phonetic text to corresponding language

text, while leaving the non-phonetic text unconverted" which is not disclosed by Chen. For at these reasons, claims 5, 26 and 48 are allowable over Chen. Applicant respectfully requests that the §102 rejection of claims 5, 26 and 48 be withdrawn.

Claim 6-8 depend directly from claim 5. **Claims 27-30** depend directly from claim 26. Accordingly, for at least these reasons, these claims are allowable and withdrawal of the rejection is respectfully requested.

Claim Rejections 35 U.S.C. §103(a)

Claims 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen. The Applicant respectfully disagrees.

Claim 9 has been amended, and as amended (the amended language appears in bold below), recites "receiving an input string containing at least first and second languages **that are represented without using different text forms**" and "determining at least one candidate string in the first language that may be used to replace the input string based on a probability of how likely the first candidate string was incorrectly entered as the input string in the first language". Support for the amendment may be found throughout the specification and drawings as filed, such as on page 7, lines 11-13. Chen does not disclose, teach or suggest these aspects.

As described in relation to claim 1, Chen describes mixed text entry which requires the use of modes to enter different text forms, such that Chinese syllables that are marked with diacritics versus non-Chinese text, which is marked with delimiters and does not include diacritics. *See Chen, Col. 6, Line 66 to Col. 7, Line 9 and Col. 9, Lines 35-40.* Therefore, Chen does not disclose, teach or

suggest the above referenced limitations. For at these reasons, claim 9 is allowable over Chen. Applicant respectfully requests that the §103 rejection of claim 9 be withdrawn.

Claims 10-13 depend directly from claim 9. Accordingly, for at least these reasons, these claims are allowable and withdrawal of the rejection is respectfully requested.

Claim Rejections 35 U.S.C. §103(a)

Claims 14-25 and 49-50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen in view of well-known-prior art (MPEP 2144.03) (hereinafter "Examiner's Assertion") and further in view of U.S. Patent Number 6,487,533 to Hyde-Thomson et al. (hereinafter ""Hyde-Thomson"). The Applicant respectfully disagrees.

Claim 14 is directed to a method including "receiving an input string containing at least first and second languages", "determining at least one first candidate string that may be used to replace the input string based on a first probability of how likely the first candidate string was incorrectly entered as the input string in the first language", "determining at least one second candidate string that may be used to replace the input string based on a second probability of how likely the second candidate string was incorrectly entered as the input string in the second language", "using the first candidate string if the first probability is higher than the second probability to derive at least one output string containing the first language" and "using the second candidate string if the first probability is lower than the second probability to derive at least one output string containing the

second language". Neither Chen, the Examiner's Assertion, nor Hyde-Thomson, alone or in combination, disclose, teach or suggest the claimed aspects.

The Office asserts that Chen "discloses determining at least one second candidate string that may be used to replaces the input string". *See Office Action Dated July 9, 2004, Page 10.* The Applicant respectfully disagrees. Chen merely describes "a computer processing system for phonetic Chinese that allows a mixed Chinese and non Chinese (e.g., English) text to be processed". *See Chen, Col. 4, Lines 23-25.* Claim 14, however, recites first and second candidate strings that may be utilized to replace **the** input string. Therefore, either of the first and second candidate strings may be used in the "using" steps to replace the input string. Chen, however, merely describes a mixed Chinese and non Chinese text and does not disclose, teach or suggest the two determining steps as claimed.

The Office then correctly asserts that Chen "does not expressly disclose the step of determining second candidate based on a second probability of how likely the second candidate string was incorrectly entered as the input string in the second language". *See Office Action Dated July 9, 2004, Page 10.* The Office also asserts, however, that "official notice is taken that the feature of determining a candidate string based on a probability of correctness in the input string in English language (second language) is well known in the art". *See Office Action Dated July 9, 2004, Page 10.* The Applicant respectfully disagrees.

To make a *prima facie* case of obviousness, "the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination." *See MPEP § 2141 and Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 220 USPQ 182, 187 n.5 (Fed. Cir. 1986).* Additionally, "it is necessary to ascertain whether the prior art teachings would

appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification." *In re Lalu, 747 F.2d 703, 223 USPQ 1257, 1258 (Fed. Cir. 1984).*

As stated above, claim 14 recites two determining steps which are performed based on respective first and second probabilities of how likely the first and second candidate strings were incorrectly entered as the input string in the respective first and second languages. The Examiner's Assertion, however, merely contains the unsupported assertion that "it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Chen by specifically providing a mechanism of determining a candidate string based on a probability of correctness in the input string in English language, for the purpose of improving reliability for the system". *See Office Action Dated July 9, 2004, Page 10.*

The Applicant respectfully submits that no such motivation is provided by Chen and that such a combination with the Examiner's Assertion would not result in the claimed invention. As previously described, Chen relies on different text modes (i.e., absence or use of absence of diacritic marking and special delimiters) for entry of Chinese and non Chinese text. *See Chen, Col. 6, Line 66 to Col. 7, Line 9.* Therefore, Chen relies exclusively on these special markings to indicate whether the text is Chinese or non Chinese, and does not compute probabilities for an input string as claimed in Claim 14 to determine whether it is likely that the input string is in a first language or a second language. Accordingly, Chen, even if modified as asserted, would not result in the claimed limitation and further contains no motivation for the modification.

The Office then asserts Hyde-Thomson to correct the defects of Chen and the Examiner's Assertion. Specifically, the Office asserts that "it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Chen in view of well know prior art by specifically providing a mechanism of determining language based on a likelihood value, as taught by Hyde-Thomson, for the purpose of identifying a language for further processing". *See Office Action Dated July 9, 2004, Page 11.* The Applicant respectfully disagrees.

Hyde-Thomson is directed to a unified messaging system with automatic language identification for text-to-speech conversion. Although Hyde-Thomson mentions conversion of text-to-speech utilizing different languages, text is converted utilizing a single language, as shown in the following excerpts that were asserted by the Office:

> The trigraph analyzer examines a text sequence, and performs language identification operations by first determining the occurrence frequencies of sequential 3-character combinations within the text, and then comparing the determined occurrence frequencies with reference occurrence statistics for various languages. The set of reference occurrence statistics associated with a given language are stored together as a corecurrence library. The trigraph analyzer determines a closest match between the determined occurrence frequencies and a particular corecurrence library, and returns a corresponding language identifier and likelihood value to the message inquiry unit. *See Hyde-Thomson, Col. 3, Lines 6-17.*
>
> Upon receiving the language identifier and an acceptable likelihood value, the message inquiry unit 226 selects the appropriate text-to-speech engine 242, 243, 244, 245, 246 in step 314. In the event that the text-to-speech engine 244, 245 and its associated phoneme library 254, 255 do not presently reside within the memory 210, the message inquiry unit 226 transfers the required text-to-speech engine 244, 245 and the

> corresponding phoneme library 254, 255 from the data storage unit 206 into the memory 210. *See Hyde-Thomson, Col. 7, Lines 13-21.*

As shown in the above excerpted portion, Hyde-Thomson merely identifies a particular text-to-speech engine which is then used to convert text to speech. Neither Hyde-Thomson, Chen, nor the Examiner's Assertion, alone or in combination, disclose, teach or suggest the two "using" steps as claimed.

In accordance with Applicant's duty under M.P.E.P. §2144.03 to seasonably challenge such unsupported statements, the Examiner is hereby requested to cite a reference supporting the position that it would have been obvious to determine "at least one first candidate string that may be used to replace the input string based on a first probability of how likely the first candidate string was incorrectly entered as the input string in the first language" and determine "at least one second candidate string that may be used to replace the input string based on a second probability of how likely the second candidate string was incorrectly entered as the input string in the second language" as claimed. If the Examiner is unable to provide such a reference, and is relying on facts based on personal knowledge, Applicant hereby requests that such facts be set forth in an affidavit from the Examiner under 37 C.F.R. 1.104(d)(2). Absent substantiation by the Examiner, it is respectfully requested that the rejection under 35 U.S.C. § 103 be withdrawn. Accordingly, for at least these reasons, claim 14 is allowable and withdrawal of the rejection is respectfully requested.

Claims 15-22 depend directly from claim 14. Accordingly, for at least these reasons, these claims are allowable and withdrawal of the rejection is respectfully requested.

Claim 23 recites "allowing entry of an input string containing at least first and second languages without switching modes for entry of the first and second languages", "determining probable candidate strings in at least one of the first and second languages that may be used to replace the input string based on probabilities of how likely each of the candidate strings was incorrectly entered as the input string", and "selectively performing, based on the probabilities, one of (1) converting the input string to an output string in the first language and outputting the output string, or (2) outputting the input string in the second language". Neither Chen, the Examiner's Assertion, nor Hyde-Thomson, alone or in combination, disclose, teach or suggest the claimed aspects.

As previously described in relation to claim 1, Chen describes mixed text entry which requires the use of modes to enter different text forms, such that Chinese syllables are marked with diacritics versus non-Chinese text, which is marked with delimiters and does not include diacritics. *See Chen, Col. 6, Line 66 to Col. 7, Line 9 and Col. 9, Lines 35-40.* Therefore, Chen does not disclose, teach or suggest the above referenced limitations. Neither the Examiner's Assertion nor Hyde-Thomson corrects this defect.

Additionally, as previously described in relation to claim 14, neither Hyde-Thomson, Chen, nor the Examiner's Assertion, alone or in combination, disclose, teach or suggest the two determining step as claimed in claim 23. Further, neither Chen, the Examiner's Assertion, nor Hyde-Thomson, alone or in combination, disclose teach or suggest the "selectively performing" step as claimed in claim 23. As the Examiner is aware, the Examiner "ordinarily should reject each claim on all valid grounds available." *M.P.E.P. §707.07(g)* Further, "[w]here a major technical rejection is proper, it should be stated with a full development of reasons rather than by a mere conclusion coupled with some stereotyped expression." *Id.* Absent support by the Office for the "selectively performing" step, the Applicant respectfully requests withdrawal of the rejection.

Claims 24-25 depend directly from claim 23. Accordingly, for at least these reasons, these claims are allowable. These claims are also allowable based on their own recited features, which are not disclosed, taught or by Chen, the Examiner's Assertion, nor Hyde-Thomson. For example, claim 24 recites "selectively displaying the output string or the input string in the single edit line", which is not disclosed, taught or suggested by the asserted references. Therefore, withdrawal of the rejection is respectfully requested.

Claim 49 recites "determine probable candidate strings in at least one of the first and second languages that may be used to replace the input string based on probabilities of how likely each of the candidate strings was incorrectly entered as the input string". **Claim 50** recites "determine at least one first candidate string written in the phonetic text that may be used to replace the input string based on a first probability of how likely the first candidate string was incorrectly entered as the input string" and "determine at least one second candidate string written in the

non-phonetic text that may be used to replace the input string based on a second probability of how likely the second candidate string was incorrectly entered as the input string in the second language". Accordingly, as previously recited in respect to claim 14, these claims are allowable as neither Chen, the Examiner's Assertion, nor Hyde-Thomson, alone or in combination, disclose, teach or suggest these aspects and withdrawal of the rejection is respectfully requested.

Claim Rejections 35 U.S.C. §103(a)

Claims 30-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen in view of U.S. Patent Number 5,510,990 to Woodruff et al. (hereinafter "Woodruff"). The Applicant respectfully disagrees.

Claim 31 recites a language input architecture comprising "a typing model to receive an input string and determine a typing error probability of how likely a first candidate string was incorrectly entered as the input string, the typing model being trained in a first language" and "a language model to provide output strings for each of the typing candidates, the language model being trained in a second language". Neither Chen nor Woodruff, alone or in combination, disclose, teach or suggest these aspects.

Beginning at page 7 of the subject specification, an exemplary use of the typing model and typing error probability with a language model is described. A typing model, for instance, may be configured to generate a list of probable typing candidates that may be substituted for the input string based on typing error probabilities of how likely each of the candidate strings was incorrectly entered as the input string. The probable typing candidates may be stored in a database. The language model may then provide probable conversion strings for each of the

typing candidates. The conversion string may be written in a different language or different text form than the input string. For example, the input string might comprise Chinese Pinyin or other phonetic text and the output string might comprise Chinese Hanzi or other language text. Based upon the probabilities derived in the typing and language models, for instance, a search engine may select the associated typing candidate and conversion candidate that exhibits the highest probability. For example, the search engine converts the input string (e.g., written in phonetic text) to an output string consisting of the conversion candidate returned from the language model so that the entered text form (e.g., phonetic text) is replaced with another text form (e.g., language text). In this manner, any entry error made by the user during entry of the phonetic text is eliminated.

The Office correctly asserts that Chen does not expressly disclose typing error probability. The Office, however, then asserts that Woodruff discloses reducing probability of data entry. *See Office Action Dated July 9, 2004, Page 14.* The Applicant respectfully disagrees. Woodruff merely describes avoidance of typing errors caused by manual entry of property values for component modes for designing components in a computer aided design (CAD) environment, as shown in the following excerpts asserted by the Office:

> To ensure accuracy when retrieving property values for a given component, the exception value has priority over all rule defined property values (rule-based values). *See Woodruff, Col. 2, Lines 3-6.*
>
> Automatically defining property values also reduces the probability of data entry errors because the amount of manually entered data is significantly reduced when compared to previous systems.
>
> BRIEF DESCRIPTION OF THE DRAWINGS

> FIG. 1 is an illustration of an environment in which the preferred embodiment of the invention resides.
>
> FIG. 2 is a more detailed illustration of an environment is which the preferred embodiment resides.
>
> FIG. 3 is a more detailed illustration of the component information workbench of FIG. 2. *See Woodruff, Col. 2, Lines 18-29.*

As shown in the above excerpted portions, Woodruff merely describes that "[a]utomatically defining property values also reduces the probability of data entry errors". *See Woodruff, Col. 2. Lines 18-20.* Indeed, Woodruff teaches against the use of typing by limiting the amount of typing performed to locate a component. Nowhere does Woodruff, alone or in combination with the other asserted references, disclose, teach, or suggest determining "a typing error probability of how likely a first candidate string was incorrectly entered as the input string" as claimed in claim 31. Therefore, for at least this reason, claim 31 is allowable and withdrawal of the rejection is respectfully requested.

Claim 30 depends directly from claim 26. **Claim 32** depends directly from claim 31. Accordingly, for at least these reasons, these claims are allowable as being dependent on an allowable base claim. These claims are also allowable based on their own recited features, which are not disclosed, taught or by Chen, nor Woodruff, alone or in combination. For example, claim 30 also recites typing error probabilities, which as previously described in relation to claim 31 is not disclosed, taught, or suggested by Chen or Woodruff, alone or in combination. Therefore, withdrawal of the rejection is respectfully requested.

Claim Rejections 35 U.S.C. §103(a)

Claims 33-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen in view of well-known-prior art (again "the Examiner's Assertion") in view of Woodruff and further in view of Hyde-Thomson. The Applicant respectfully disagrees.

Claim 33 is directed to a language input architecture comprising "a first typing model to receive an input string and determine a first typing error probability of how likely a first candidate string was incorrectly entered as the input string", "a second typing model to receive the input string and determine a second typing error probability of how likely a second candidate string was incorrectly entered as the input string" and "a search engine to select one of the first and second candidate strings with a highest typing error probability".

The Office first asserts Chen, stating "Chen does not expressly disclose to determine a probability of how likely the first candidate was incorrectly entered as the input string in the first language". *See Office Action Date July 9, 2004, Page 15.* It is respectfully submitted that the Office then contradicts itself, asserting that "the feature of using probability for determining candidates is well known in the art as evidenced by Chen himself who further discloses using statistical model for the notional words (column 5, line 8) , which is inherently includes probability calculation for determining likely candidate". *See Office Action Date July 9, 2004, Pages 15-16.* The Office then states it would have been obvious to make the modification for the purpose of further removing ambiguity, and references the following portions of Chen, which are excerpted as follows:

> Any remaining ambiguity of notional words is removed by a statistical model. *See Chen, Col. 5, Lines 7-8.*

> If an erroneous spelling is detected 408, i.e., there is not match in table 700, the most probable syllable is displayed 409. This is done by presenting a menu of probable choices, i.e. best matches 1023, selected from the Chinese syllable list 700. The user selects 409 the proper syllable from the menu by using a selection apparatus, e.g., a mouse 1031 or a key. *See Chen, Col. 12, Line 63 to Col. 13, Line 2.*

As shown in the above excerpted portions, Chen merely describes selection by a user from a menu. As claimed, in claim 33, however, a search engine selects "one of the first and second candidate strings with a highest typing error probability". Neither Chen nor the other asserted references, alone or in combination, disclose, teach or suggest this aspect.

The Office then asserts that Chen further discloses a second typing model, and again asserts column 4, lines 23-61, which were excerpted above. The Applicant respectfully disagrees. Chen merely describes a "computer processing system for phonetic Chinese that allows a mixed Chinese and non Chinese (e.g., English) text to be processed". *See Chen, Col. 4, Lines 21-24.* Chen, alone or in combination with the other asserted references, does not disclose, teach, or suggest a second typing model. As previously stated in relation to claim 14, the Examiner's assertion does not correct this defect.

The Office then correctly asserts that Chen in view of the Examiner's assertion does not expressly disclose the probability as being typing error probability. *See Office Action Date July 9, 2004, Page 16.* The Office then asserts Woodruff to correct this defect. However, as previously stated in relation to claim 31, Woodruff merely describes that "[a]utomatically defining property values also reduces the probability of data entry errors". *See Woodruff, Col. 2, Lines 18-20.* Nowhere does Woodruff, alone or in combination with the other asserted references, disclose, teach, or suggest a typing error probability as claimed.

The Office then further correctly asserts that Chen in view of the Examiner's Assertion in view of Woodruff does not expressly disclose a search engine to select one of the first and second candidate string with a highest typing error probability. *See Office Action Date July 9, 2004, Page 17.* However, the Office then asserts Hyde-Thomson to correct this defect. As previously described, Hyde-Thomson merely describes selection of a speech-to-text engine, which is then utilized to convert speech according to the single language corresponding to that particular speech-to-text engine. Hyde-Thomson, alone or in combination with the other asserted references, does not disclose, teach or suggest a search engine to select one of the first and second candidate strings with a highest typing error probability as claimed in claim 33. Thus, the combination of Chen, the Examiner's Assertion, Woodruff and Hyde-Thomson would not result in the claimed invention.

Obviousness cannot be established by combining the teaching of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hosp. Sys., Inc. v. Montefiore Hosp.,* 732 F.2d 1572, 221 USPQ 929 (Fed. Cir. 1984). Thus, the Office may not use the patent application as a basis for the motivation to combine or modify the prior art to arrive at the claimed invention. In the rejection of Claim 33, it is respectfully submitted that the Office has not supplied motivation from the references for support of the modifications, but rather has relied on unsupported assertions (i.e., the Examiner's Assertion) to make the rejection.

Accordingly, for at least these reasons, claim 33 is allowable and withdrawal of the rejection is respectfully requested.

Claim 42 recites language input architecture comprising "a user interface to receive an input string written in a combination of phonetic text and non-phonetic text", "a first typing model to produce probable first typing candidates written in the phonetic text that may be substituted for the input string based on typing error probabilities of how likely each of the first candidate strings was incorrectly entered as the input string", "a second typing model to produce probable second typing candidates written in the non-phonetic text that may be substituted for the input string based on typing error probabilities of how likely each of the second candidate strings was incorrectly entered as the input string", "a language model to provide possible conversion strings written in language text for the first typing candidates written in the phonetic text", and "a search engine configured to selectively (1) convert the input string to one of the conversion strings so that the phonetic text is replaced with the language text, or (2) output one of the second candidates so that the non-phonetic text is maintained without conversion". Accordingly, this claim is also allowable for the same reasons as recited in relation to claim 33 and withdrawal of the rejection is respectfully requested.

Claims 34-41 depend either directly or indirectly from claim 33. **Claims 43-46** depend either directly or indirectly from claim 42. Accordingly, for at least these reasons, these claims are allowable as being dependent on an allowable base claim. These claims are also allowable based on their own recited features, which are not disclosed, taught or suggested by Chen, the Examiner's Assertion, Woodruff, nor Hyde-Thomson, alone or in combination. Therefore, withdrawal of the rejections is respectfully requested.

Conclusion

Claims 1-46, and 48-50 are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the subject application.

Respectfully Submitted,

Date: 9/27/04

By: _____
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Oc#: ms1-564us/Ms#: 141562.03